CHICAGO UNION STOCK YARDS
AN INSURANCE REVIEW

BY

A. M. JENS

ARMOUR INSTITUTE OF TECHNOL

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Illinois Institute of Technology
Chicago, Illinois.

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Jackson Van Buren Parker
1873-1936

Whose personality and vision were
greatly instrumental in promoting
and developing scholarships in
Fire Protection Engineering.

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Chicago Union Stock Yards

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CHICAGO UNION STOCK YARDS—
AN INSURANCE REVIEW

A THESIS

PRESENTED BY

ARTHUR MARX JENS

TO THE

PRESIDENT AND FACULTY

OF

ARMOUR INSTITUTE OF TECHNOLOGY

FOR THE DEGREE OF

FIRE PROTECTION ENGINEER

MAY 27, 1920

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Introduction

The Chicago Union Stock Yards District, with its large insurable values and unusual conditions is worthy of the most careful study by all fire insurance underwriters and engineers.

Since the leaders in the packing industry, Armour, Swift, Morris, and Wilson, represent the important interests of the stock yards districts in other cities, and since their policy and the general conditions of their properties in other districts are the same as at the Chicago Union Stock Yards, it is presumed that the study submitted herewith will also be of value in reviewing insurance conditions in these other districts.

Location

Chicago, situated at the foot of Lake Michigan, and the railroad center of the United States, affords the best opportunity to transport live stock from the middle west, and the meat and by-products to the congested territories. It is also the second largest city of the United States, and is in itself an important center of consumption for the output of the packers.

It must therefore be conceded that the selection of the City of Chicago for the location of a stock yards district was a natural and a wise one. With the probable development of waterways making Chicago accessible to ocean-going steamers from the Atlantic and the Gulf of Mexico, there can be no doubt that Chicago will continue to be a logical and desirable location.

Description

The Chicago Stock Yards District is that portion of the southwest side of the city, occupying about one square mile of territory bounded roughly as follows: on the north by the forks of the south branch of the Chicago River; on the south by W. 47th Street; on the east by S. Halsted Street; and on the west by S. Ashland Ave.

By those in the district it is usually grouped in three subdivisions:

Packingtown, which includes the plants of Armour & Co. and Swift & Co., with their subsidiaries; Morris & Co., Wilson & Co., and various smaller properties, - lying mostly between W. 39th Street, W. 47th Street, S. Racine Ave., and S. Ashland Ave. The plant of Wilson & Co. lies immediately on the west side of Ashland Ave. and the G. H. Hammond

Co. plant immediately on the east side of Racine Ave.

The Stock Yards, which include the cattle pens, horse barns, exposition buildings, etc., of the Union Stock Yards and Transit Co., with minor other properties lying between the River, W. 47th Street, Halsted St., and S. Racine Ave.

The Independents, consisting of plants outside of the principal district, but in the immediate vicinity: on the north, Western Packing & Provision Co., Siegel Hechinger Packing & Provision Co., and Illinois Packing Co; on the east, Independent Packing Co., Pfaelzer & Sons, John Agar, Brennan Packing Co., and the Illinois Smoked Meat Co; on the south, Chicago Packing Co., Strasser Packing Co., and the Wimp Packing Co.

Permanency

From time to time there has arisen agitation against the location of the Stock Yards in its present district: the principal objection of the general public is to the sanitary conditions, especially the smell; and the complaint of surrounding property owners is due to the supposed unfavorable influence on both residential and manufacturing possibilities. The agitation has never been very great nor persistent and is always met openly and frankly by the packers.

They have taken many steps to make their premises more sanitary, cleaner, and to eliminate the smell,- partly as a matter of protection against such agitation, and partly as a matter of economy with a view to better utilization of by-products: as examples may be cited the installation of concrete water troughs in place of the old leaky wooden troughs in the cattle

pens, etc; brick paving has been laid in pens, which permits of better attention to pens, as well as the utilization of cleanings in fertilizer; a regular system of rubbish removal has been instituted in all the plants, - in the larger ones this is a continuous operation, and in all plants it is a matter of daily attention; salvaging stations have been established to utilize fully the material considered worth saving, and incinerators have been built to dispose immediately of the matter not worth saving; settling vats, skimming stations, and filtration plants have been established, always with the same two points in mind - promotion of sanitation and elimination of waste; the sewerage system is being extended and developed and the filling in of the stagnant branches of the Chicago River is progressing.

The district employs from forty to fifty thousand people, which necessitates housing

facilities for two hundred thousand people. The majority of employees are unskilled laborers of the poorer type and naturally the houses would not be of the best. The packers early saw the need for improvement and recognized the value of better housing conditions, not only to their employees, but to surrounding property owners as well. That there has been a decided improvement is clearly evident, for one need but take a trip to the back-of-the-yards district to realize the large amount of new and decidedly better construction which has taken place.

Originally other manufacturers and owners were inclined to keep their plants away from the Stock Yards district because of the unsanitary conditions and because of the influence on the labor market. That both of these objections have seemingly disappeared is best evidenced by the development of the large Central Manufacturing District immediately

to the north.

The objections and criticisms of the general public and surrounding property owners are being largely overcome so there should be no doubt of the continuance of the Yards in the present district.

Development and Stability

The packing industry as now carried on is a development which has more than kept step with the progress of the country. In the early days there were scattered slaughter houses, some where only beef were killed and others where only hogs were killed. Now all the killing of animals is done in the one district. Where the animals formerly came singly or in small droves to the village slaughter house, there has now grown up a business which ranks with the greatest in the United States. In 1866 the value of the year's receipts of live stock at the Chicago Stock Yards totaled $42,765,328, while last year the 309,000 car

loads received had a valuation of $900,000,000, and the valuation of the yearly output of the packers now runs approximately $1,000,000,000.

To take care of this growth and to handle this enormous volume of business (Sheet "E") there has been need for improvement and scientific study in all lines:

Perfection of Equipment

In the packing industry the perfection of equipment has been more rapid in the last ten years than ever before, machinery has been designed always with the thought of minimizing labor, speeding production and smoothing operation.

To realize the development in this direction one need only to visit the modern packinghouse and see the journey of a hog over the "hog wheel" to the sticking bed, then watch the carcass as it passes through the scalding vat, lands in the coolers. Or in the beef killing department where one may stand on a bal-

cony and see the live cattle come in to the knocking pens, then watch the carcass travel by carrier over the bleeding floor and by travelling beds through the skinning department where each man does only one or two things and naturally does them more rapidly, skillfully, and well.

Utilization of By-Products

This has been perhaps the foremost factor in the development of the Packing Industry. In the days of the small slaughter house all that was utilized from the animals was the meat and the hides of cattle and sheep. Today not one scrap is wasted, witness, the buttons, hairpins, and other novelties made from hoofs and horns, the "camels hair" brushes made from the hair from inside the ears of cattle, neatsfoot oil from the marrow in the shin bones, etc.

Live Stock Improvement

Along with other matters the packers give continuous thought to how best increase quantity

and quality of live stock - note their interest in the Live Stock Exposition.

Guarding Labor Relations

The packers have given close attention to the labor situation and have recognized the interests of labor. They have been leaders in matters pertaining to welfare: sanitary dressing rooms have been installed; nonprofiting restaurants have been established; life insurance, pension funds and similar benefits provided (one of the most successful in this direction is the pension fund of Armour & Co.) and social work in the homes and among the families has been carried on. The packers subscribed immediately to the administration of President Wilson's mediation commission and have followed out the awards to labor as directed by Federal Judge Samuel Alschuler.

During the war time period there was a considerable change in the class of labor employed in the district; the Slavs and other

foreigners returned to their native country, or found more profitable employment, and the percentage of colored help was increased. This situation was undoubtedly a large contributor to the recent race riots with attendant fire, but the packers, with others, are giving the matter serious attention and it is believed this difficulty will also be solved without further seriously affecting the general situation in the district.

Capital

With the development of the packing industry there has been a corresponding demand for capital. Today the men most interested in the stock yards district are men who also are controlling factors in the largest banks of the middle west. With the growing assets, with the capital involved, and with the banking world so vitally concerned there can be no question of the stability of the business while our present social system maintains.

Occupancy and Hazards

The increased development of the by-products industry has introduced into Packingtown other than ordinary meat packing occupancies. There is, for example, the manufacture of fertilizer, butterine, and more recently, the manufacture of bone novelties and glycerine, with degreasing plants, gas plants, etc.

The packers have also gone extensively into the business of handling eggs and cheese as well as packing fruits and vegetables. However, these features have not seriously increased the potential conflagration possibilities for the requirements of the food inspectors and the suggestions of the insurance raters, coupled with operating conditions, have made for the breaking up of fire areas and the consequent segregation of processes and their hazards.

This introduction of new hazards, due to expansion of the industry, has been largely

offset by the removal of secret control. The open acquirement by Armour & Co. and Swift & Co. of plants such as the Anglo and North American, and G. H. Hammond & Co., has resulted in these properties being transformed from independently operated, full fledged packing establishments, to practically warehouse branches of the main plants.

During the last year there has been a tendency for further change in this direction, that is, a tendency to make the district a purely meat-handling center. This change is due to several reasons, action on the part of the federal authorities, revision of general plans, and natural conditions.

Tanneries have always been located away from the district, partly because it was easier to ship hides to the bark than bark to the hides. Fertilizer plants are being erected entirely outside of the district, where rock and other ingredients are more easily brought in.

Poultry and egg handling plants are being established away from the large cities in an attempt to separate the interests of the packers and more because of the natural advantages. The units are smaller and consequently not so easily and cheaply shipped, and the method of killing and packing requires somewhat more detailed handling. Milk, butter and cheese handling establishments, and vegetable canneries, etc., are being located nearer the source of supply

Construction

In the early days of the Stock Yards the construction throughout was undoubtedly poor, buildings being brick or frame, of large areas, with extensive frame roof structures and no attempt at protection of exterior and interior openings. Partly because of pressure from Federal, City, and insurance authorities, and partly because of the realization on the part of the packers of the advantages in improve-

ment, there has been during the past fifteen years a most decided change for the better.

As an illustration, reference to the attached data (Sheet "A") will show that of a total of 496 buildings, 97, or nearly 20%, are fire resistive, and 83, or nearly 17%, are sprinklered. Many of the balance are "slow burning." Further, the standards of construction for brick buildings as laid down by the Chicago Board of Underwriters, and followed by the packers, are higher than anywhere else. Note the following:

The minimum thickness for brick walls is 16" and standard parapet must extend at least four feet above roof with full thickness of sixteen inches.

Tin-clad doors are not accepted on account of the atmospheric and other conditions, and the required thickness of iron doors is increased from the standard #12 guage to #10.

Standard form of communication between sections is through fireproof vestibules with double standard iron doors on each side; fire must needs travel through four doors to pass from one section to another.

Passageways between buildings, if open or if enclosed and of fire resistive construction with thin glass skylights, must be protected at each end with standard fire door; if enclosed and not entirely of fire resistive construction they must be protected at each end by double standard fire doors.

New roof structures must be noncombustible throughout and exterior of old roof structures are not to be protected with metal, but with transite, hollow tile, or similar noncombustible material.

Floors, where wet or greasy, are protected with a top layer of paving brick or asphalt.

Public Protection

The public protection in the Stock Yards District is equal to the best in the City of Chicago. Streets are well paved throughout, all dirt and plank roads having been eliminated. In answer to first alarms, there respond five engine companies, two trucks, insurance patrol #4, three marshalls, and one extra squad of six men; on the second alarm, the additional response is five engines, one truck, and two marshalls; the third alarm,

corresponding to a 4-11, brings an additional five engines, one truck and the chief. In most cases the Insurance Patrol is the first on the ground and their efficient handling of private equipment is worthy of special comment.

A diagram is submitted showing location and sizes of mains. No attempt is made to show location of individual hydrants, but suffice to say they are ample. The water supply has been reinforced by the installation of 24" and 36" mains on the south and west; the pressure varying from fifteen to thirty pounds, and with cross connections of 8", 12", 16", and 24" mains, the supply is such as to take care of all fire engines answering any alarms.

In previous years there was a tendency on the part of fire department chiefs to criticize the lack of water, but since the installations noted above there has been no cause for complaint.

Private Protection and Fire Prevention

In the matter of private protection the Stock Yards is far ahead of any other congested district in this or any other city. A glance at the tables appended hereto will show a total of eighty-three sprinklered buildings (approximately 17%) out of the total of 496 (Sheet "A"). Of these sprinklered sections part are further protected by Central Station Valve Alarm and Supervision as follows: ten of Morris & Co; thirty-four of Wilson & Co; eleven of Libby McNeill & Libby; six of the Continental Packing Co; and six of Darling & Co.

Three hundred and thirty-two private watchmen report at least every hour (some every half hour) on 1747 central station fire alarm and watch service boxes (Sheet "B"). Compare this number of boxes in the area of approximately one square mile with the 2100

boxes in the balance of the 250 square miles of Chicago.

Private fire departments are equipped with 213,000 feet of 2-1/2" rubber-lined hose used for fire purposes only (Sheet "C"). Private reservoirs, tanks and cisterns have an approximate capacity of 13,895,000 gallons fed from artesian wells and with city connections (Sheet "D"). High pressure private water mains with 65 to 75 pounds normal pressure and 125 to 150 pounds fire pressure supply inside 6" standpipes and outside private hydrants from ample pumping capacity - in the case of Swift & Co., 27,413,280 gallons daily.

Fire alarms for the district are first transmitted to the five public engine companies of the district, the insurance patrol and twenty-six local stations such as private fire halls, pumping stations, etc., and then immediately afterwards transmitted to the balance of the public fire department headquarters.

In addition to the plentiful supply of hose, additional hand fire protection in the way of fire axes, chemical extinguishers, and water barrels and pails, is well distributed. Because of the presence of trained firemen, the five-gallon extinguisher has been adopted as standard. Buildings four stories and over are equipped with iron fire escapes and those under four stories are equipped with fire escapes or ladders extending from ground to roof. Further, the larger plants maintain private police departments with night and day shifts.

In the direction of fire prevention every precaution is taken and every hazard safeguarded: watchmen are required to see that all fire doors are securely closed; they are instructed to see that greasy rags are in proper containers and to report carelessness on the part of foremen in maintaining cleanliness and order, - in most plants certain men are designated to clean up each floor on company

time before leaving at night; Central Station runner service checks up watchmen on delays of over ten minutes; ventilated metal lockers are provided and practically all dressing rooms are fireproof; heat, light, and power are cut off whenever not in use; smoke houses are cut up into small sections and equipped with steam jets; laundries for press cloth and other washing are invariably of fireproof construction; "No Smoking" signs are posted and except in specified rooms, smoking is strictly prohibited.

External Conflagration And Exposure

An examination of the surrounding territory will show that the external conflagration exposure to the Union Stock Yards district is relatively light from all sides. To the north is the Central Manufacturing District with its buildings largely of superior construction, protected with automatic sprinklers, and separated from the Yards to a considerable extent by the branches of the river, and open area.

To the south there is a residential and light manufacturing district with buildings largely of frame; this condition is, however, improved by some broken areas and by the fact that the break at 47th Street is increased by the railroad yards where several tracks immediately alongside the street are kept open at all times. In the southwest corner of the Yards district the outside residential and manufacturing area projects into the district at Gross Point, but, here again, the situation is relieved by the diagonal street and open areas.

On the east the exposure is perhaps the heaviest of any side for the territory is fairly well built up with manufacturing plants and residences; nevertheless, it is broken up by open areas, main line railroad tracks, and fairly broad streets.

On the west is a residential and manufacturing district and the exposure is the lightest

for there again are so many open areas, railroad tracks (kept open), and wide streets.

Internal Conflagration Hazard

Herewith is submitted a fire map of the district in 1915, as furnished by the Sanborn Map Company, which has been brought to date. There is also submitted an original outline map showing the arrangment and grouping of fireproof and sprinklered building. This arrangement, together with wide street separation at Packers and Racine Avenues, has established fairly efficient fire stops in the heart of the Packingtown district.

This control of the internal conflagration hazard is further reinforced by the protection throughout of exterior openings of brick and fireproof buildings with wire glass windows and iron shutters. The vanishing point for exposure is considered as 100 feet; exterior openings and roof structures exposed within that distance are usually protected.

The plant of Wilson & Co. on the west is fireproof and sprinklered and is separated from the balance of Packingtown by some open area and by Ashland Ave. with light exposure immediately on the east consisting of small buildings and the sprinklered plant of Darling & Co. It is also fairly well detached on other sides and should therefore be considered a separate underwriting unit.

The Anglo American Provision Co. plant on the north is detached from the balance of Packingtown, about two hundred feet across tracks, with part sprinklered buildings and open areas on the south side of the gap. On the northeast corner it is midly exposed by the City of Chicago Reduction plant, and on the southeast corner by the stock yard pens, but otherwise it is out in the open, and accessible to public protection from all sides. It is one of the few plants accessible to the fire boats. The criticism of the underwriter

to the railroad tracks on the south should not be to their congestion, for as a rule they are kept fairly open, but rather to the fact that street traffic is blocked by the heavy switching going on. This situation is continually watched by the inspectors for the Chicago Board of Underwriters and is further guarded by the immediate presence of Engine Co. #53.

The G. H. Hammond Co. plant at the southeast corner of Packingtown is detached about two hundred feet from the balance of the main properties, but the effectiveness of this detachment is reduced by cattle pens, runways, and storage yards, so that it can only be considered a semi-isolated spot in the general area.

The Stock Yards, with its wooden pens, sheds, runways, and fences, can only be treated as one conflagration unit of the district, but here again there is decided improvement due to the erection of fireproof buildings, con

crete viaducts, platforms, runways, and troughs, and to the fact that floors of pens are now of brick.

A study of this map will, therefore, clearly indicate that the segregation of certain areas makes for a comparitively mild internal conflagration hazard.

Review

To consider the Chicago Union Stock Yards district as an insurance problem one needs to keep uppermost the viewpoint of the Underwriter. With this thought in mind the various factors are herewith reviewed.

The original selection of the City of Chicago for a stock yards was, as has been shown, a natural and logical one. That the general location will continue to be satisfactory is also undoubtedly the case.

With continued improvement in the sanitary conditions and proper attention to the rights of others, there should be no question

of the continuance of the district at its present location. The heads of the various concerns are wise enough to recognize the need for continuous, stable, and scientific development and there is no stagnation.

The general reputation and worth of the leaders excludes the possibility of any moral hazard. They have adopted a broad policy in all matters pertaining to national and civic affairs. It will be recalled that the Federal government recently took steps to compel the divorce of the so-called grocers' sundries department of the big packers from the balance of their business. The packers not only complied with the government's requirement, but are going a step further and are gradually segregating and reorganizing their by-products departments.

In considering the physical features it must be recognized that the congestion of values and the requirements for insurance

are in what is known as Packingtown.

The standard of construction in the Yards is superior; walls are heavier and floors are usually thicker than the standards call for, with floor openings well cut off. Underwriters have claimed with justice that the use of asphalt top flooring was not always a benefit on account of the heavy smoke generated at time of fire. This criticism is being met by substituting brick. Also, there has been the general impression that once a fire gained headway, the floors would surely fall and practically a total loss result. This was undoubtedly the case with old style buildings, but present standards have been in effect about fifteen years and walls of the more modern buildings are heavier. Also, much closer attention is paid to floor loads (under City supervision). Further, the buildings are of plainer construction than in usual congested districts, being without the easily damaged

trim, decorations, and finish.

The public protection in the Yards is as good as elsewhere in Chicago. After the death of Chief Horan and his men in the Morris fire of 1912, there was a natural tendency to over-caution on the part of the public fire department, but with the passing of time this failing is being eliminated. The efficient and speedy work of the Insurance Patrol is most effective in preventing fires from gaining headway.

As to private fire protection and fire prevention, it must be conceded that Packingtown is far in the lead in the efficiency of its watch service systems, perfection of fire alarm service, organization of private fire departments, frequency of various types of inspection service, attention to matters pertaining to general care and upkeep and the safeguarding of hazards. In this latter connection electric wiring is receiving close

attention; special and lengthy tests on open work and on conduit installations are being held.

While the contents of the buildings are varied, as a whole they are not so readily combustible nor so damageable as the stocks common to the usual congested business district, with its millinery stores, art galleries, department stores, etc. The occupancy arrangement of the plants is of course largely dependent upon operating conditions, and the segregation of by-products departments should result in the further separation of hazards and the grouping of storage sections.

The external conflagration exposure may be classified as moderate. The territory surrounding the Yards is most certainly of as favorable a nature as one could expect, with open areas, reasonably broad streets, and main line railroad tracks. To the north is the superior Central Manufacturing District. The prevailing winds are westerly and in this

direction open areas and the sprinklered plant of Wilson & Co. should serve as favorable stops to the main district.

The outline map submitted shows the location and arrangement of fire resistive and sprinklered buildings which coupled with certain wide streets and open areas make for several possible conflagration stops. The standards require wired glass windows or iron shutters against all exposures within one hundred feet and this requirement is being pretty generally met. Furthermore, the number of openings in outside walls are comparitively few so that cross drafts would be broken up and the horizontal spread of fire stopped. The internal conflagration hazard should therefore be classed as mild.

Attached hereto (Sheet "F") is a statement giving authorizations for congested districts of various cities where general volume, that is, district areas and heights of build-

ings, compares somewhat with Packingtown. The total area of Packingtown is approximately two hundred acres and the area, excluding Wilson & Co., G. H. Hammond & Co., and the Anglo American Packing & Provision Co. plants is approximately 175 acres.

In an underwriting consideration of the district:

The plant of Wilson & Co. should be treated as a separate conflagration unit.

The independent plants on the outside of the main district, with some slight modification in the case of the Western Packing & Provision Co. on the north and the Independent Packing Co. on the east, should be underwritten as being in separate conflagration units.

The property of the Union Stock Yards & Transit Co., insured under a general form of $5,026,500, is of such a nature and so located that lines thereon must necessarily be

affected by a consideration of the writings in Packingtown. A conflagration in the Stock Yards should not involve Packingtown, but one involving Packingtown would also spread to the Stock Yards.

The underwriter should endeavor to get a spread in relatively small amounts over the entire Packingtown district. As the limit is approached the selection should, if possible, be more and more from high rated, greater premium producing risks.

The plant of the Anglo American Provision Co. should be treated as a separate conflagration unit, or at least the detached heavy values should be utilized to materially increase the limit of the Packingtown district.

The authorization for the Packingtown district should rank higher than for congested districts of similar area in our moderate-sized towns of the middle west.

CLASSIFICATION OF BUILDINGS IN PACKINGTOWN

Firm	Ord.	Fire Resis.	Spkld.	Total
Armour & Co.	63	20	10	93
Anglo Am. P. & P. Co.	40	1	0	41
No. Am. Prov. Co.	7	0	0	7
N. W. Glue Co.	6	0	0	6
Swift & Co.	76	38	3	117
G. H. Hammond Co.	26	0	0	26
Morris & Co.	31	18	10	59
Wilson & Co.	8	12	34	54
Libby,McNeill & Libby	-	2	11	13
Cont. Packing Co.	7	-	6	13
Darling & Co.	13	3	9	25
Friedman Mfg. Co.	8	0	0	8
Hine Bros.	7	0	0	7
Boyd Lunham & Co.	7	0	0	7
Roberts & Oake	5	1	0	6
Miller & Hart	8	1	0	9
Thorkildsen-Mather	4	0	0	4
W. D. Smith	0	1	0	1
	316	97	83	496

Ordinary: unsprinklered brick and/or frame buildings.
Sprinklered: buildings of all types of construction, fireproof and ordinary, which are under sprinkler protection.
Fire Resistive: only unsprinklered buildings of fire resistive class.

A. D. T. PROTECTION
in
STOCK YARDS DISTRICT

Firm	Watchmen 1918	Watchmen 1920	Central Station Fire Alarm & Watch Boxes 1918	Central Station Fire Alarm & Watch Boxes 1920
Armour & Co.	105	110	353	382
Anglo Amer. P.&P.Co.	10	10	83	79
No. Amer. Prov. Co.	3	3	38	38
N. W. Glue Co.	2	2	-	8
Swift & Co.	50	60	315	351
G. H. Hammond Co.	36	18	124	116
Nelson Morris & Co.	20	23	181	182
Wilson & Co.	15	15	106	97
Libby,McNeill & Libby	35	35	69	113
Continental Pkg. Co.				
Darling & Co.	7	7	55	55
Roberts & Oaks	2	2	18	21
Miller & Hart	3	3	42	42
Guggenheim Bros.	1	1	10	13
Chicago Packing Co.	1	1	15	15
H. Boore	3	3	23	23
Boyd, Lunham & Co.	2	2	17	21
W. D. Smith	1	1	1	1
Thorkildsen-Mather Co.	1	1	6	6
Western Packing Co.	3	3	23	24
Independent Packing Co.	2	2	17	18
City of Chicago Reduction Plant	2	2	12	12
U.S. Yards & Transit Co.	25	25	115	116
Louis Pfaelzer	3	3	14	14
	332	332	1637	1747

PRIVATE FIRE DEPARTMENTS

Firm	Fire Halls	Firemen	Feet of 2-1/2" Standard Hose
Armour & Co.	2	Chief & 12 men	37000
Anglo Amer. P. & P. Co.	2	" " 8 "	9200
No. Amer. Prov. Co.	1	" " 4 "	1650
N. W. Glue Co.	-	1 man	1000
Swift & Company	2	" " 14 men	67650
G. H. Hammond Co.	1	" " 8 "	10000
Nelson Morris & Co.	2	" " 11 "	28400
Wilson & Company	1	" " 6 "	18000
Libby, McNeill & Libby	2	" " 12 "	8900
Continental Packing Co.			5500
Darling & Co.	-	2 "	1850
Friedman Mfg. Co.	-	1 man	850
Hine Bros.	-	1 "	350
Boyd, Lunham & Co.	1	4 men	1250
Roberts & Oaks	-	1 man	1150
Miller & Hart	-	1 "	1250
U. S. Yards & Transit Co.	1	" " 4 men	19000
	15	99	213000

PRIVATE WATER SUPPLIES

Firm	Gallons in Reservoirs	24 Hour Pumping Capacity-Gallons
Armour & Co.	1,879,000	15,250,000
Anglo Amer. P. & P. Co.	306,800	2,618,800
No. Amer. Prov. Co.	179,908	1,512,000
N. W. Glue Co.	912,000	275,000
Friedman Mfg. Co.	-	175,000
Swift & Co.	1,438,000	27,413,280
G. H. Hammond Co.	704,484	1,000,000
Nelson Morris & Co.	2,465,560	7,920,000
Wilson & Company	1,000,000	9,936,000
Libby, McNeill & Libby	172,000	2,000,000
Continental Packing Co.	25,000	720,000
Darling & Co.	228,820	1,690,000
Boyd, Lunham & Co.	166,000	720,000
Miller & Hart	100,000	500,000
Thorkildsen-Mather	92,812	
Hine Bros.	-	300,000
Union Stock Yards & Transit Co.	4,225,000	3,000,000
	13,895,384	76,030,080

Note: Reservoirs supplied both from artesian wells and city mains

PRIVATE WATER SUPPLIES

Firm	Gallons in Gravity Tanks	Cisterns	Artesian Wells
Armour & Co.	190,000	-	12
Anglo Amer. P. & P. Co.	-	1	2
No. Amer. Provision Co.	-	-	-
N. W. Glue Co.	-	-	1
Friedman Mfg. Co.	-	-	-
Swift & Co.	66,000	1	6
G. H. Hammond Co.	-		3
Nelson Morris & Co.	150,000	2	6
Wilson & Co.	100,000	-	2
Libby, McNeill & Libby	32,000	1	1
Continental Packing Co.	50,000	-	1
Darling & Co.	73,000	-	1
Boyd, Lunham & Co.	-	-	1
Miller & Hart	-	-	1
Thorkildsen-Mather	-	-	-
Hine Bros.	-	1	-
Union Stock Yards & Transit Co.	-	3	1
	661,000	9	38

"D"
Cont.

RECEIPTS OF STOCK

Year	Cattle	Calves	Hogs	Sheep	Horses
1866	393,007	-	961,746	207,987	1,553
1886	1,963,900	51,290	6,718,761	1,008,790	27,599
1906	3,329,250	413,269	7,275,063	4,805,449	126,979
1919	3,502,400	751,008	8,672,476	5,243,957	45,762
Total	119,655,888	10,584,004	336,965,793	137,871,395	3,582,558

Note:- 1866 was the first full year of operation.
Total figures are for 54 year period.
Total valuation for period, $13,379,081,914.

TOTAL SHIPMENTS OF STOCK

Year	Cattle	Calves	Hogs	Sheep	Horses
1866	263,693	-	482,875	75,447	162
1886	704,675	18,657	2,090,784	266,912	26,388
1906	1,352,998	23,325	1,742,606	1,341,273	106,604
1919	1,171,167	50,340	1,100,635	1,309,005	43,492
Total	47,178,348	974,433	84,930,657	32,629,885	3,233,615

Note:- 1866 was the first full year of operation.
Total figures are for 54 year period.

CONFLAGRATION AREA AUTHORIZATIONS

of a

LEADING INSURANCE COMPANY

City	Acres	1906	1920
Chicago Packing Town	200	$500,000	$ 750,000
Milwaukee	260	750,000	1,500,000
Minneapolis	300	750,000	1,750,000
Louisville	370	750,000	1,000,000
St. Paul	175	800,000	1,250,000
Omaha	200	750,000	1,250,000
Grand Rapids	170	500,000	600,000
Memphis	150	500,000	600,000
Nashville	165	400,000	600,000

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Packing Houses, Their Processes and Hazards, S. H. Lockett.

Quarterlies, N. F. P. A.

Map of Union Stock Yards by Sanborn Map Co. 1915.

The Swift Year Book, -1920, Swift & Co., 1920.

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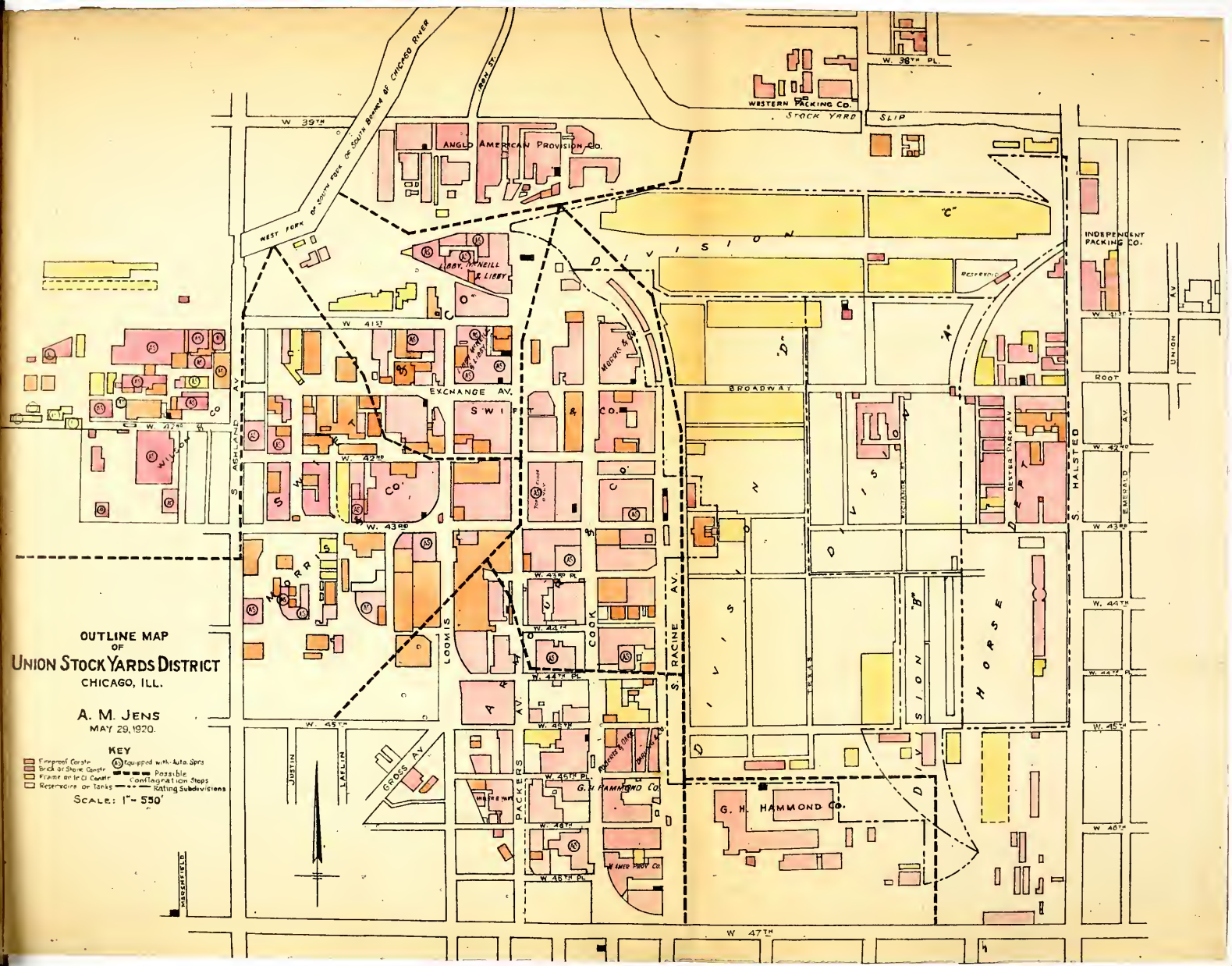
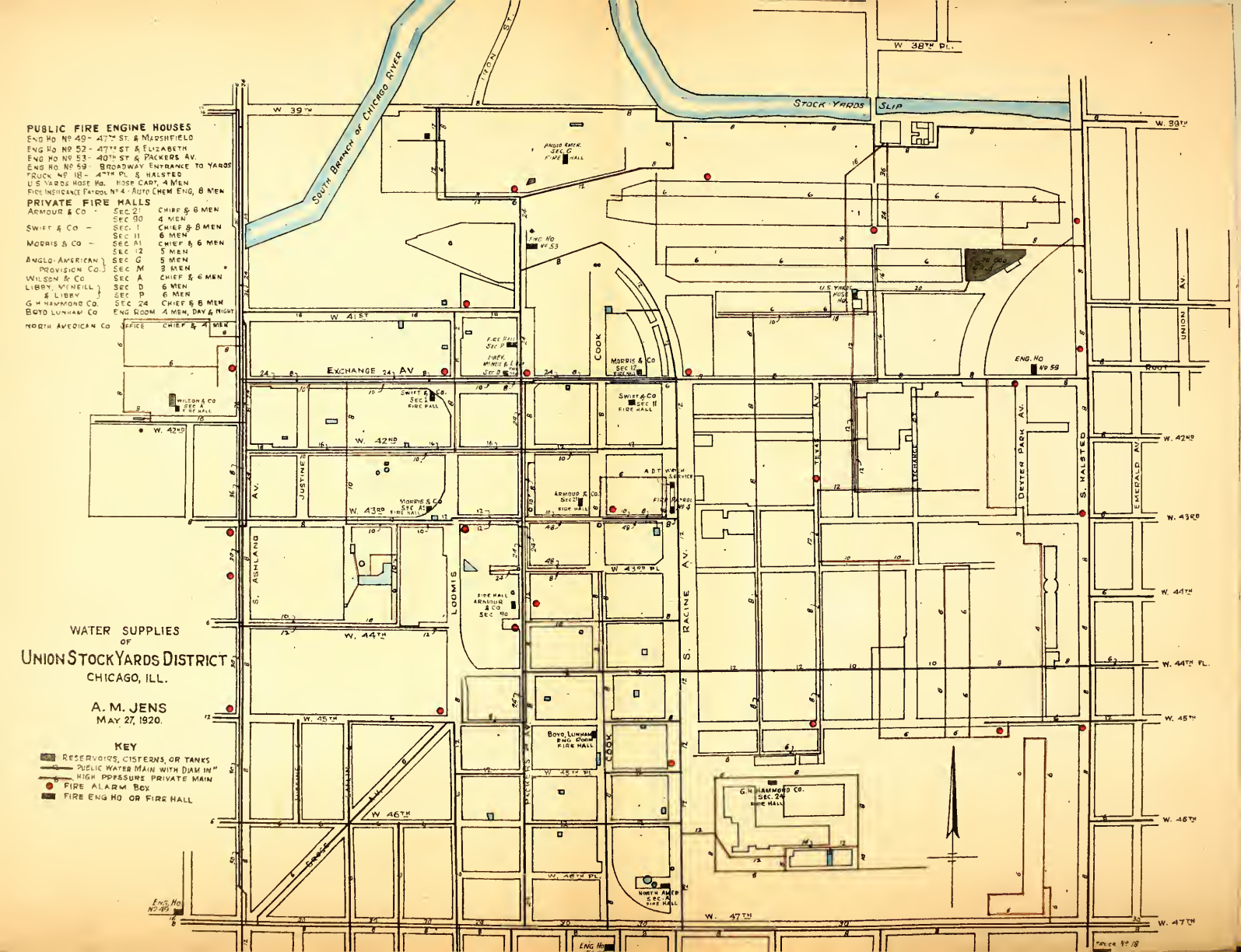
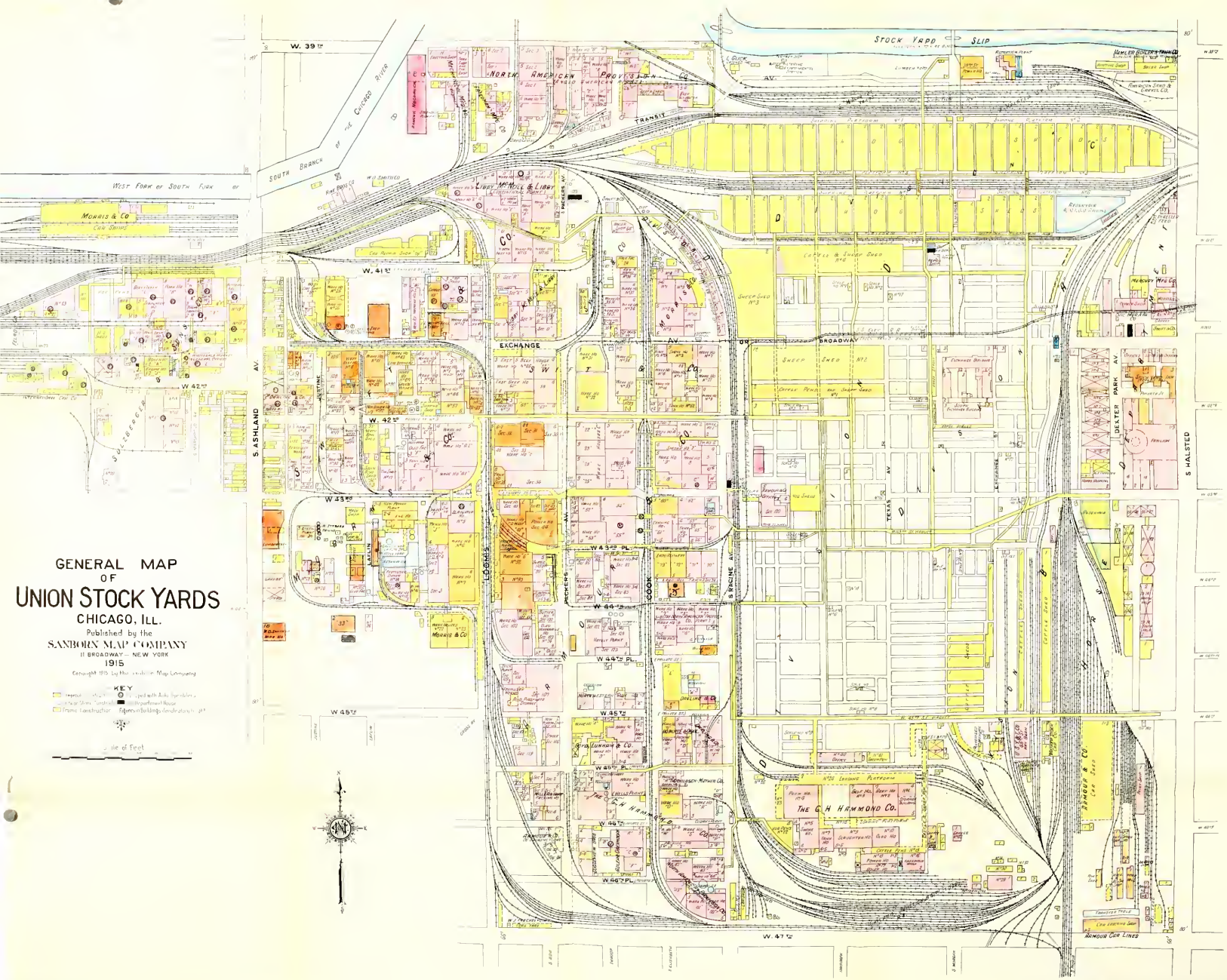

OUTLINE MAP
OF
UNION STOCK YARDS DISTRICT
CHICAGO, ILL.
A. M. JENS
MAY 29, 1920.
KEY
Fireproof Constr.
Brick or Stone Constr.
Frame or I.C.I. Constr.
Reservoirs or Tanks
Equipped with Auto Sprs
Possible Conflagration Stops
Rating Subdivisions
SCALE: 1" = 550'
WEST FORK OF SOUTH BRANCH OF CHICAGO RIVER
IRON ST.
W. 39TH
W. 38TH PL.
WESTERN PACKING CO.
STOCK YARD SLIP
ANGLO AMERICAN PROVISION CO.
LIBBY, McNEILL & LIBBY
INDEPENDENT PACKING CO.
"C"
DIVISION
Reservoir
W. 41ST
EXCHANGE AV.
SWIFT & CO.
Morris & Co.
BROADWAY
"D"
"A"
ASHLAND AV.
W. 42ND
W. 43RD
W. 43RD PL.
W. 44TH
W. 44TH PL.
W. 45TH
W. 45TH PL.
W. 46TH
W. 46TH PL.
W. 47TH
ROOT
UNION AV.
HALSTED
EMERALD AV.
DEXTER PARK AV
VINCENNES RD.
TEXAS
"B"
HORSE
LOOMIS
RACINE AV.
COOK
ARMOUR AV.
PACKERS AV.
CROSS AV.
JUSTIN
LAFLIN
MASSACHUSETTS
G. H. HAMMOND CO.
Armour Prov. Co.
Brown Co.
Patrick Fire


PUBLIC FIRE ENGINE HOUSES
Eng Ho № 49 - 47TH St. & Marshfield
Eng Ho № 52 - 47TH St. & Elizabeth
Eng Ho № 53 - 40th St. & Packers Av.
Eng Ho № 59 - Broadway Entrance to Yards
Truck № 18 - 47TH Pl. & Halsted
U.S. Yards Hose Ho. Hose Cart, 4 Men
Fire Insurance Patrol № 4 - Auto Chem. Eng. 8 Men
PRIVATE FIRE HALLS
Armour & Co - Sec. 21 Chief & 8 Men
Sec 90 4 Men
Swift & Co - Sec. 1 Chief & 8 Men
Sec 11 6 Men
Morris & Co - Sec. A1 Chief & 6 Men
Sec 12 5 Men
Anglo-American Provision Co. Sec G 5 Men
Sec M 3 Men
Wilson & Co Sec A Chief & 6 Men
Libby, McNeill & Libby Sec D 6 Men
Sec P 6 Men
G H Hammond Co. Sec 24 Chief & 8 Men
Boyd Lunham Co Eng Room 4 Men, Day & Night
North American Co Office Chief & 4 Men
South Branch of Chicago River
Stock Yards Slip
W 38TH Pl.
W 39TH
W 41ST
W. 42ND
W. 43RD
W. 43RD Pl.
W. 44TH
W. 44TH Pl.
W. 45TH
W. 45TH Pl.
W. 46TH
W. 46TH Pl.
W. 47TH
Exchange Av.
Root
Union Av.
Cook
Justine Av.
S. Ashland
Loomis
S. Racine Av.
Texas Av.
Dexter Park Av.
S. Halsted
Emerald Av.
Packers Av.
Eng. Ho № 59
Eng. Ho № 53
Eng. Ho № 49
Truck № 18
Anglo-American Sec G Fire Hall
Fire Ho № 53
Fire Hall Sec F
Libby, McNeill & Libby Sec D Fire Hall
Swift & Co Sec 1 Fire Hall
Swift & Co Sec 11 Fire Hall
Morris & Co Sec A1 Fire Hall
Wilson & Co Sec A 2nd Fl. Hall
Armour & Co Sec 21 Fire Hall
Fire Hall Armour & Co Sec 90
Fire Patrol № 4
A.D.T. Watch & Service
Boyd, Lunham Bag. Co. Fire Hall
G.H. Hammond Co. Sec. 24 Fire Hall
North American Co Sec A Fire Hall
U.S. Yards Hose Ho.
Side Door Pullman Co.
WATER SUPPLIES
OF
UNION STOCK YARDS DISTRICT
CHICAGO, ILL.
A. M. JENS
MAY 27, 1920.
KEY
Reservoirs, Cisterns, or Tanks
Public Water Main with Diam in "
High Pressure Private Main
Fire Alarm Box
Fire Eng Ho or Fire Hall


W. 39TH
SOUTH BRANCH OF THE CHICAGO RIVER
WEST FORK OF SOUTH FORK OF
MORRIS & CO
CAR SHOPS
NORTH AMERICAN PROVISION CO
STOCK YARDS SLIP
TRANSIT
LIBBY, McNEILL & LIBBY
S. PACKERS AV.
W. 41ST
EXCHANGE
BROADWAY
W. 42ND
W. 42ND
S. ASHLAND AV.
SOUTHBOUND
W 43RD
W 43RD PL
W 44TH
W 44TH PL
W 45TH
W 45TH PL
W 46TH
W 46TH PL
W. 47TH
S. RACINE AV.
S. HALSTED
DEXTER PARK AV
THE G. H. HAMMOND CO.
ARMOUR CAR LINES
GENERAL MAP
OF
UNION STOCK YARDS
CHICAGO, ILL.
Published by the
SANBORN MAP COMPANY
11 BROADWAY — NEW YORK
1915
KEY
Scale of Feet